

THE MINERAL INDUSTRY OF SWITZERLAND

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The reserves of the small deposits of metalliferous ores that once existed in Switzerland have been mostly depleted, and metal mining has ceased. Any new metal mining activities were being discouraged for environmental reasons. Mineral assets were limited, although Switzerland does serve as a major diamond exchange.

All metal production in Switzerland in 2002 was from either imported raw materials or scrap. Metal processing was confined mainly to the production of primary and secondary aluminum, copper, secondary lead, and steel. Switzerland relied on imports for many mineral commodities because of self-imposed environmental restrictions and lack of natural resources. Concerns about environmental pollution reportedly caused the adoption of a policy to gradually curtail or perhaps even cease smelting activities. Mineral production was mainly in industrial mineral commodities required for construction. These included cement, clays, gravel, gypsum, lime, and sand (table 1).

The Swiss mineral industry was largely controlled by the Government and was owned either privately or by regional governments (table 2). The 26 regional (cantons) or communal governments grant mining or processing licenses and directly operate electrical generating facilities, gas utilities, local transportation facilities, and water resources. The final executive authority for the mineral industry was vested in the Federal Council, comprising regional delegates and representatives of the four major political parties.

Trade has been the key to prosperity in Switzerland. The country is dependent upon exports to generate income while dependent upon imports for many mineral commodities. The country has liberal trade and investment policies (U.S. Department of State, 2002§¹). The United States trade balance with Switzerland is shown in table 3.

Alusuisse Sierre AG (part of the Alcan Group of companies) continued production at its aluminum smelter at Steg. The plant at Sierre rolls sheets for the automotive, building, industrial, and transport markets and industrial plate for a variety of applications. Alusuisse's particular specialty was the automotive market (Alcan Inc., 2002§).

Schmelzmetall AG was a producer of special forms of hard copper alloys in its vacuum-melting refinery. The company was ISO 9002 QM certified and the only company manufacturing at this standard of quality in Switzerland. The company specialized in high-performance beryllium copper alloys. The alloy's special characteristics were its hardness and high thermal and electrical conductivity (Avins Corp., 2002§).

Produits Artistiques de Métaux Précieux S.A. (PAMP) operated one of the world's largest and most modern gold refineries. All gold-bearing material can be treated. PAMP produces the largest selection of gold bullion bars in the world, offers a full range from 1-gram (g) to 12.5-kilogram bars, and dominates the world market for gold bars weighing less than 50 g. PAMP was expected to start refining platinum-group metals in the near future (Produits Artistiques de Métaux Précieux S.A., 2002§).

Metallum AG, a secondary lead smelter, operated in Pratteln, 70 kilometers west of Zurich close to the French and German borders. Design capacity in 2002 of the CX scrap-battery-components recovery plant was to treat 32,000 metric tons (t) of spent battery lead. The CX process consists of battery breaker, components separation, paste desulfurization, and anhydrous sodium sulfate production. Output in 2002 was antimonial and calcium lead plus a small amount soft solder in bars (Engitec Technologies spa, 2002§).

A relatively small domestic market and a high degree of specialization characterized the steel industry in Switzerland.

Scrap steel is a valuable secondary raw material in a country short of raw materials. About 1 million metric tons per year (Mt/yr) of scrap steel is collected. There is a dense network of collection points, scrap processors, and traders to handle this scrap. Stahl Gerlafingen AG was a major consumer of this material and operated a modern high-efficiency electric arc furnace at its plant at Gerlafingen for melting down scrap steel. Gerlafingen was the leading supplier of reinforced steel products in Switzerland (Stahl Gerlafingen AG, 2002§).

Steel production at the von Moos Stahl AG plant at Emmenbrücke near Lucerne starts with melting steel scrap in the electric arc furnace. From there, the scrap passes to the ladle furnace. In the next step, billets of 130 square millimeters are produced by a three-strand continuous casting machine from which the steel is rolled into bars or wire rod. Von Moos is among the leading suppliers of engineering and free-cutting steel for automated machinery (von Moos Stahl AG, 2002§).

Holcim (Schweiz) AG was the largest cement, concrete, and gravel producer in Switzerland. Holcim operated seven cement plants mainly on the French and German borders. These plants had a capacity of 4.3 Mt/yr.

Switzerland, which is a large diamond center, was actively involved in cutting and polishing diamonds. The country played a significant role in international trade activities in diamonds, although it has no diamond mines, and the main diamond trading centers are in Antwerp, Belgium; London, United Kingdom; and Tel Aviv, Israel.

Salt was produced by one company, La Societe des Mines Le Bouillet. In 2002, the mine at Bex produced 50,000 metric tons per year of salt from brine and was the exclusive domestic supplier of the Canton of Vaud.

¹References that include a section mark (§) are found in the Internet References Cited section.

Petroplus International N.V. was one of Europe's leading midstream oil companies and a major independent tank storage operator. Midstream is the term used to cover the area of the oil chain focused on refining and storing crude oil and wholesale marketing oil products. Petroplus was centered around three business units—oil (refining and marketing), logistics (tank storage), and other businesses, mainly engineering and shipping. The Cressier refinery can produce 68,000 barrels per day, and Petroplus has 765,000 cubic meters of tank storage in Switzerland (Petroplus Corp., 2002§).

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TABLE 1
SWITZERLAND: ESTIMATED PRODUCTION OF MINERAL COMMODITIES^{1,2}

(Thousand metric tons unless otherwise specified)

Commodity ³	1998	1999	2000	2001	2002
METALS					
Aluminum:					
Primary metric tons	32,062 ⁴	34,439 ⁴	35,539 ^{4/}	36,000	36,000
Secondary do.	6,000	15,000	15,000	6,000	6,000
Iron and steel:					
Pig iron	100	100	100	100	100
Steel, crude	1,018 ⁴	1,037 ⁴	1,140 ^r	1,100	1,100
Semimanufactures, rolled products	700	700	700	700	700
Lead, refined, secondary metric tons	7,600	9,200 ⁴	10,100 ⁴	9,800	9,800
INDUSTRIAL MINERALS					
Cement, hydraulic	3,600	3,600	3,600	3,600	3,600
Gypsum	300	300	300	300	300
Lime	35	30	30	30	30
Nitrogen, N content of ammonia	31	32	33 ⁴	31	33 ⁴
Salt	300	300	300	300	300
Sulfur, from petroleum refining metric tons	4,000	3,000	3,000	3,000	3,000
MINERAL FUELS AND RELATED MATERIALS					
Petroleum refinery products:					
Liquefied petroleum gas thousand 42-gallon barrels	2,000	2,000	2,000	2,000	2,000
Gasoline do.	9,000	9,000	9,000	8,690 ^r	9,000
Distillate fuel oil do.	9,500	9,500	9,500	3,036 ⁴	3,000
Residual fuel oil do.	5,500	5,500	5,500	3,397 ⁴	3,500
Bitumen do.	800	800	800	800	800
Refinery fuel and losses do.	2,000	2,000	2,000	2,000	2,000
Total ⁵ do.	28,800	28,800	28,800	19,900	20,300

^rRevised.

¹Table includes data available through March 2003.

²Estimated data are rounded to no more than three significant digits; may not add to totals shown.

³In addition to the commodities listed, a variety of crude construction materials (common clay, sand and gravel, and stone) were produced, but output was not reported, and available general information was inadequate to make reliable estimates of output level.

⁴Reported figure.

⁵Total of listed products only.

TABLE 2
SWITZERLAND: STRUCTURE OF THE MINERAL INDUSTRY IN 2002

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum		Alusuisse Sierre AG (Alcan Group, 100%)	Smelter at Stag, rolling mill and plant at Sierre	168
Cement		Holcim (Schweitz) AG (Holcim Group, 100%)	Plants (seven) at various locations	4,300
Do.		Cementfabrik Holcim AG (Holcim Group, 100%)	Plant at Rekingen	700
Copper	metric tons	Schmelzmetall AG (Adkins Corp., 100%)	Refinery at Gurtneilen	2,400
Gold	do.	Produits Artisiques de Métaux Précieux S.A.	Refinery at Castel San Pietro	400
Lead, secondary		Metallum AG	Smelter at Pratteln	13
Refinery, petroleum	barrels per day	Tamoil (Suisse) S.A.	Refinery at Collombey	47,000
Do .	do.	Petroplus International NV (Petroplus Corp., 100%)	Refinery at Cressier	68,000
Salt		La Societe des Mines (Canton of Vaud, 100%)	Saline plant at Bex	50
Steel		Stahl Gerlafingen AG (Swiss Steel AG, 100%)	Plant at Gerlafingen	650
Do .		von Moss Stahl AG (Swiss Steel AG, 100%)	Plant at Emmenbrücke	300

TABLE 3
 SWITZERLAND: EXPORT AND IMPORT TRADE
 WITH THE UNITED STATES

(Million dollars)

Month	2001 ¹		2002 ²	
	Exports	Imports	Exports	Imports
January	935	872	485	599
February	1,132	845	540	609
March	1,174	937	716	795
April	1,011	1,083	683	852
May	1,236	846	693	806
June	980	785	805	849
July	486	754	722	865
August	515	681	538	727
September	401	624	582	740
October	650	828	545	913
November	707	765	641	839
December	580	648	833	788
Total	9,807	9,668	7,783	9,382

¹Source: U.S. Census Bureau, Foreign Trade Division, July 2002.

²Source: U.S. Census Bureau, Foreign Trade Division, April 2003.